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tivity or energy, and consequently in a correspondingly increased degree disturb the serenity if not the structural economy of the oyster.

Having reached thus far, the invader is in the immediate vicinity of, if not the seat of intellect, the centre of sensitiveness. The deposit of nacre in such instances must be very rapid; and it is quite possible that the unwelcome explorer is not only enshrouded and entombed in pearl, but previously drowned in a pearlaceous flood, for it may be reasonably presumed that the annoyance caused by its presence must be exceedingly great, and likely to induce a copious flow of nacreous lymph at the point and in the region of greatest irritation. It is evident that the deposition and induration are sufficiently rapid to inclose the parasite before decomposition has taken place.

THE WORLD'S FAIR OF 1892.

AMONG those who have volunteered suggestions as to the scope of the exhibition to be held in 1892, is Mr. Edward Atkinson. Although it may be said that Mr. Atkinson overlooks the main cause for the holding of such an exhibition, which is that it serves merchants and manufacturers with a good means of advertising, yet as his letter contains so many good suggestions likely to improve the tone of the exhibition we quote literally from it. Mr. Atkinson writes:—

I have watched with some interest the course of the discussion on the exhibition proposed for 1892. I have had a little experience in such matters, and have given some thought to the subject. . . . It seems to me that the day has gone by for a great world's fair or bazaar, in which all kinds of goods and wares may be displayed, largely for purposes of advertising them, without much system or method and without any distinctive purpose in the general scope or plan of the exhibition, except to make a great show. Any one who desires to study or observe such goods and wares can find a better exhibition in the shop windows than has ever yet been put together in a world's fair or bazaar. Such fairs are cumbrous, costly, tiresome, and unsatisfactory. The time was when they were novel, interesting, instructive, and useful. The diplomas are, as a rule, of little or no value. I exhausted the dictionary at the Centennial of 1876 in trying to vary the diplomas which we gave substantially to every one who made an exhibit in our group, and the few who were refused afterwards appealed to the higher powers, and obtained their diploma or certificate of excellence. . . . There was, however, one conspicuous exception in the Centennial to the generally commonplace character or want of distinct purpose in the method of exhibiting. The Kansas and Colorado exhibit of natural products and resources laid the foundation of the progress of agriculture and mining in that section.

When I was called upon to advise how the exhibition at Atlanta should be laid out and directed, my first conception was to bring together every thing that could be exhibited or made known in regard to cotton, not only in respect to the fibre but in respect to the seed and the plant. Presently it became apparent to me that such an exhibition would tend more and more to the concentration of Southern efforts upon cotton only and would stand in the way of the diversity of industry which that special section especially needed; I therefore conceived the plan of imitating the Kansas and Colorado exhibit, and advised the directors to interest the Southern railroads, the owners of land, and the owners of mining property in bringing together that wonderful collection of timber, minerals, and the products of the soil which really formed the most important part of the so-called Cotton Exposition. . . . When such men as the Innmans and others assure me that the effect of that exhibition and the carrying out of that specific suggestion made the real starting-point in the progress of the South in all the arts which are now gaining so rapidly, and made known to the Southerners themselves, as a body, the magnitude of their own resources, which had hardly been conceived even by the few, I can no longer resist the conclusion that mine was a happy thought, and that I did contribute in considerable measure to the progress and prosperity of the Southern States. Of course, in the nature of the case, the progress would ultimately have been made, but the great and early start is dated from the Atlanta Exposition.

The motive of the exhibition in 1892 is that the year recalls the

date of the discovery of America by Europeans four hundred years ago. Ought not the motive of such an exhibition to be the progress in human welfare in four hundred years, through the application of science and invention to the pursuits of peace? Ought not such an exhibition to illustrate the interdependence of nations, the growth of commerce, and of modern industry, — prophetic of the time when war shall be forbidden at the command of commerce? Four hundred years ago the invention of gunpowder had only begun to promote equality in the conditions of men; it had only begun to make the power of the serf equal to that of the seignior; it had only begun to do away with the dominion of privilege, and to establish the dominion of human rights; it had only begun to alter the relations of men in the exchange of services from distribution according to status to distribution according to contract. The invention of printing had only begun to diffuse intelligence; it had only begun to make possible and to establish a system of common law; it had only begun to make known to the poor and feeble that He who created the world ruled all things well and recognized no difference among men because of race, birth, condition, or color. The long struggle for equal rights, first taking the form of resistance to superstition, and of wars waged nominally on religious grounds, was soon converted into a system of war waged by nations in order that the so-called civilized nations of Europe might each on its own behalf dominate sections of the new world, and control by force and by colonization the commerce of the continents or of parts of continents secured by war for the sole benefit of the European countries, each for itself, by whom this dominion had been gained.

It is only within the last century of the four, or only since the physiocrats of France first entered upon the study of the relation of men to each other, and since the publication of the "Wealth of Nations," by Adam Smith in 1776, that the true function of trade and commerce has begun to be conceived among civilized men. Even at the present time the continent of Europe, which, if we separate the uninhabited portions of Norway, Sweden, and Russia, is about equal in area to the area of the United States, omitting Alaska, is divided up into substantially nineteen separate empires or States, each cut off from the other by barriers to mutual service and restrictions upon their traffic, at which barriers taxes are levied upon commerce; the avails of such taxes being more than expended in the support of armies and navies which, except for these barriers to mutual service, would not be required. Witness on the other hand, the growth and progress of this nation. The freedom from obstruction to mutual service among its citizens which was established in our organic law, in that provision of the Constitution which forbids any interference with commerce between the States, is without question the rule to which we owe more than to anything else, the preservation of the Union and the freedom from the blood tax, as well as the money tax of a standing army.

My ideas run away with me in trying to give my conception of what the exhibition of 1892 might be. My conception is yet somewhat vague. My general idea is that either by way of examples, of pictures, of graphic illustrations, and of figures, one and all combined, so far as may be, the exhibition should show the progress of modern art and industry from the pre-historic type, or from the type of 1492, down to the present day.

For instance, the art of weaving is older than history. The pre-historic loom was the same as the loom on which nine-tenths of the material for clothing the people of China is now woven — the same as the hand-loom which even to-day is in operation in the southern mountain valleys of "the land of the sky," in Kentucky, in Tennessee, and in the Carolinas — the same as the hand-loom on which the French *habitans* of Lower Canada still choose to make the fabrics with which they are clothed. It would be easily possible to give the examples in action of the whole art of weaving within the limits of a small section of a great exhibition building, the Chinese, African, South American, homespun American, and the modern, all in contrast; the Arab weaving shawls, the Daghestan carpets, the Navajo Indian blankets, etc., on the walls of which section could be pictured geographically the relative demand and supply of the different sections of the globe for the products of the loom.

The art of spinning could be illustrated in the same way; . . .

and the same conception might be adopted with respect to the art of milling, preparing grain, and making bread.

It is sometimes affirmed that there is no science of political economy. Such an exhibition as I have sketched in this somewhat visionary way would show in a concrete form the very object-lessons with which the political economy must deal; and I think one would soon predicate on the record of the past four centuries the possibilities of the next, yet it has only been within the last century that covers the existence of this nation that the chief part of this progress has been made. This has been the century in which an abundance of metals, which lie at the foundation of all arts, have been placed at the disposal of the science of metallurgy. It has been the century in which heat has been converted into power by methods which are even yet crude and imperfect; it has been the century in which time and distance have ceased in a great measure to obstruct the mutual services on which human welfare depends. We stand at the beginning of the century in which known agencies or new directions of energy—new inventions of which we can only dimly perceive and forecast in the future—will alter, change, and ameliorate the conditions of men in even greater measure than the inventions of the past, the only conditions precedent and necessary to such progress in welfare being that there shall be commensurate progress in the general intelligence of the people, especially of those who are chosen to legislate for them, equal in its measure to the progress in the arts.

Therefore the final objective point of this proposed exhibition of 1892 might well be to make it an object-lesson illustrating the interdependence of men and of nations, and their power to serve each other, in all the arts of peace which make for plenty. . . . It goes without saying that if any such comprehensive plan should be undertaken, a specific call would be made upon each State to make an exhibit of its power of serving others, by bringing together its minerals, its timbers, and the products of its soil and its forests, in a thoroughly systematic way,—after the manner of the exhibits of Kansas and Colorado in the Centennial, and after the manner of the exhibits of the Southern minerals and timber at Atlanta.

ELECTRICAL NEWS.

ATMOSPHERIC ELECTRICITY.—A study of the electric phenomena produced by solar radiations was presented at a meeting of the French Academy on Aug. 5 by M. Albert Nodon. Numerous observations made at the laboratories of the Sorbonne and the Collège de France show that on meeting an insulated metallic or carbon conductor the solar rays communicate to it a positive electric charge; that the amplitude of this charge increases with the intensity of the rays and decreases with the hygrometric state of the air, the phenomenon attaining its maximum value in Paris about 1 P.M. in summer, when the atmosphere is pure and dry; lastly, that the effects cease during the transit of clouds across the face of the sun. If these results can be extended to non-metallic bodies, then solar radiation may be regarded as one of the causes of the electrification of the clouds.

A NEW LAMP.—M. Henri Pieper, of Liège, has just invented a new incandescent lamp of very simple construction. It consists of two horizontal rods of copper placed about four millimetres apart. A thin pointed rod of carbon, placed vertically, rests on the copper rods and forms a bridge between them. The current passes between the copper rods through the carbon, which it renders incandescent. The copper rods are mounted on springs, which cause them to rise slightly when the carbon is totally consumed, and bring them against two contact pieces, thus preventing the rupture of the circuit.

HEALTH MATTERS.

THE KOLA-NUT.—The value of the kola-nut (seeds of *Sterculia acuminata*) as a dietetic and therapeutic agent has been recently tested by surgeon R. H. Firth, according to the *Lancet*. These nuts are allied in composition to cocoa, coffee, and tea, but contain a relatively large amount of caffeine. The properties ordinarily assigned to kola are those of a strong tonic and stimulant to the nervous system, counteracting and removing the sense of

exhaustion after fasting and fatigue; it has also been credited with having an antagonistic action to alcohol, and it has been said to purify water. From his observations surgeon Firth concludes that kola is in no sense a food; that it increases the total urinary water with a slight reduction of its total solids, and a marked reduction of the extractive; that it has a peculiar stimulant action on the nervous system, temporarily strengthens the heart-beat, and increases the arterial tension. In times of exertion and fasting it wards off the sense of mental and physical depression and exhaustion. As a therapeutic agent in convalescence, and as an antagonist to alcoholic sequelæ, kola has not yielded any positive results in surgeon Firth's hands. For the purification of water it does not appear to be superior to other mucilaginous seeds, its action being purely mechanical. In this report due prominence is given to the importance of separating seeds which contain no caffeine, such as *Garcina kola* and *Sterculia cordifolia*, as these would speedily discredit the employment of kola by the troops under conditions when it might possibly be of service. It appears that an infusion, from its astringent action, might be used for those suffering from diarrhoea.

NEAR-SIGHTEDNESS.—Dr. Duclaux has communicated to the Academy of Sciences, in the name of Dr. Boucheron, says the Paris correspondent of *The Medical Record*, a note relative to hereditary myopia and its treatment in adolescence. The children of myopes are not born myopes; they become so, but at an age more and more young, according as generations succeed. Thus, a grandfather who became myopic at twenty years, having a son myopic at fifteen years, they would both have a slight myopia, and would be able to read without spectacles in their old age; but their grandchildren will become myopic at twelve years, and will already have been so to a great degree. The great-grandson will be a myope at eight years, will arrive at six dioptres of myopia at fifteen years, at eight dioptres at thirty years, will lose an eye at thirty-five years, and will have great difficulty in preserving his second eye to the end of his days. It is therefore necessary that this state of things should be more rigorously attended to. Dr. Boucheron remarked that in children somewhat the same thing happens with the muscles of the eye as what occurs in writer's cramp. The child strains in writing, contracts himself, and there is produced cramp of the accommodation of the eye, and this abnormal accommodation tends to become permanent in myopic pupils. Dr. Boucheron examined one hundred lycéens, and took the measure of their myopia. He instilled atropine into their eyes, and their myopia was modified. Hence, beyond the principles of hygiene, so easy to institute, he recommends the employment, in feeble doses, of atropine, duboisine, or simply cocaine.

EAU DE COLOGNE TIPPLING.—It is said that the practice of drinking cologne is becoming very common both in Europe and in this country, and, as an indication of this, that the sale of the perfume has increased greatly of late years. Women are more addicted to the habit than men, and a writer in the *Quarterly Journal of Inebriety* says that the presence of obscure and complex nervous disorders in a woman who uses cologne externally should always suggest the possibility of its internal use.

HYGIENE CONGRESS.—The Hygiene Congress at Paris brought its labors to a close on Aug. 10. Among the subjects discussed during the week was that of the pollution of rivers. The congress decided, says *Nature*, that the pollution of underground water-courses and of rivers by the residue of factories should in principle be forbidden, and that water from factories should not flow into a stream till it had been proved to be absolutely free from all injurious substances. The congress was strongly of opinion that the most perfect method of purification was by irrigation. This, of course, must, in certain cases, be preceded by such mechanical and chemical processes as would render the water fit for agricultural purposes. It was related that many manufacturers had benefited by the application of the law, as in their efforts to prevent the pollution of watercourses they had made discoveries enabling them to utilize waste products. The difficulty was with the smaller manufacturers, who were not rich enough to take the necessary measures. The congress decided that where persistent resistance was displayed